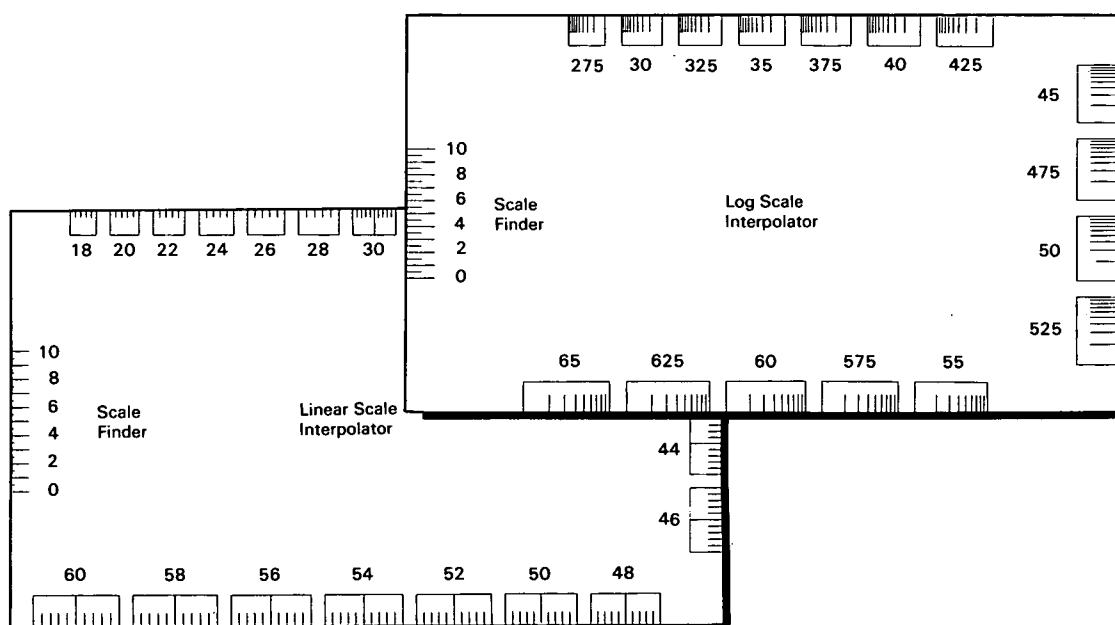


NASA TECH BRIEF



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Simple Scale Interpolator Facilitates Reading of Graphs

**The problem:**

To provide a simple device that will facilitate accurate reading of the coordinates of points on linear or logarithmic graphs plotted on rectangular grids. When a selected point does not fall exactly on one of the scale divisions on a coordinate axis, the coordinate of the point between scale divisions is commonly estimated by eye (which is subject to error) or more precisely interpolated by some other more generally complex method.

The solution:

Sets of cards with scale divisions and a scale finder printed on the margins.

How it's done:

One set of cards is provided with a series of divided scales for interpolating linear plots and another set is provided with a series of scales for logarithmic plots. A scale finder on the left-hand margin of each card, keyed to a code number near each scale, facilitates the selection of the scale that will match the two coordinate divisions bounding the point to be read on the graph. The terminal lines on the proper scale are then made to coincide with the coordinate divisions on either side of the selected point on the graph and the coordinate of the point can be rapidly read with respect to a subdivision on the full scale.

(continued overleaf)

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Notes:

1. For interpolation on linear plots, 34 different scales, with subdivisions ranging from 0 to 5 and 0 to 10, can be conveniently printed on both sides of a 3 inch \times 5 inch card. For log plots, 28 single-cycle scales covering a range of log-cycle distances from 0.25 inch to 0.875 inch are printed on both sides of a 2 $\frac{7}{8}$ inch \times 5 inch card. Larger cards are required for larger log-cycle distances.

2. A related innovation is described in NASA Tech Brief B65-10070, March 1965. Inquiries may also be directed to:

Technology Utilization Officer
Lewis Research Center
21000 Brookpark Road
Cleveland, Ohio 44135
Reference: B66-10302

Patent status:

No patent action is contemplated by NASA.

Source: Anthony Fazio, Bert Henry,
and Dorothy Hood
(Lewis 92 and 93)